

INDEX TO DATE OF ISSUE

Month	Date of Issue	Pages
March	15 April 1971	1-86
June	9 July 1971	87-228
September	11 October 1971	229-364
December	24 January 1972	365-430

Page 1

U. S. POSTAL SERVICE STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION (Act of August 12, 1970; Section 3685, Title 39, United States Code)		SEE INSTRUCTIONS ON PAGE 2 (REVERSE)
1. TITLE OF PUBLICATION: <i>Bacteriological Reviews</i>		2. DATE OF FILING: 30 September 1971
3. FREQUENCY OF ISSUE: Quarterly		
4. LOCATION OF HEADQUARTERS OR OF PUBLICATION: (Not for classes; use ZIP code) (Not present)		
5. LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHER: (Not present)		
6. NAMES AND ADDRESSES OF PUBLISHER, EDITOR, AND MANAGING EDITOR:		
PUBLISHER (Name and address): American Society for Microbiology, 4715 Cordell Ave., Bethesda, Md. 20014		
EDITOR (Name and address): R. G. E. Murray, Department of Bacteriology, University of Western Ontario, London 72, Ontario, Canada		
MANAGING EDITOR (Name and address): Robert A. Day, 4011 Rickover Rd., Silver Spring, Md. 20902		
7. OWNER: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of all stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)		
NAME ADDRESS American Society for Microbiology, 4715 Cordell Ave., Bethesda, Md. 20014		
8. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES, OR OTHER SECURITIES: (If there are none, so state.) None		
9. FOR OPTIONAL COMPLETION BY PUBLISHERS MAILING AT THE REGULAR RATES (Section 132.121, Postal Service Manual) 39 U. S. C. 3626 provides in pertinent part: "No person who would have been entitled to mail matter under former section 6359 of this title shall mail such matter at the rates provided under this subsection until he files actually with the Postal Service a written request for permission to mail matter at such rates in accordance with the provisions of this article. It hereby requests permission to mail the publication named in item 1 at the reduced postage rates presently authorized by 39 U. S. C. 3626." Signature and title of editor, publisher, business manager, or owner: <i>Robert A. Day</i>		
10. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (Section 112.122, Postal Manual) (Not for use) The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes: (If changed, publisher must submit explanation of change with this statement.) a) have not changed during preceding 12 months b) have changed during preceding 12 months		
11. EXTENT AND NATURE OF CIRCULATION		AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS
A. TOTAL NO. COPIES PRINTED (Net Press Run)		13,213
B. PAID CIRCULATION: 1. SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS, AND COUNTER SALES		0
2. MAIL SUBSCRIPTIONS		12,018
C. TOTAL PAID CIRCULATION		12,018
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS: 1. SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES		18
2. COPIES DISTRIBUTED TO NEWS AGENTS, BUT NOT SOLD		0
E. TOTAL DISTRIBUTION (Sum of C and D)		12,036
F. OFFICE USE, LEFT-OVER, UNACCOUNTED, SPOILED AFTER PRINTING		1,195
G. TOTAL (Sum of B, C, D, E, F, and G) (Include paid net press run shown in A)		13,213
(Signature of editor, publisher, business manager, or owner) <i>Robert A. Day</i>		

PS Form 3526 July 1971

INDEX TO DATE OF ISSUE

Month	Date of Issue	Pages
March	15 April 1971	1-86
June	9 July 1971	87-228
September	11 October 1971	229-364
December	24 January 1972	365-430

Page 1

U. S. POSTAL SERVICE STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION (Act of August 12, 1970; Section 3685, Title 39, United States Code)		SEE INSTRUCTIONS ON PAGE 2 (REVERSE)
1. TITLE OF PUBLICATION: <i>Bacteriological Reviews</i>		2. DATE OF FILING: 30 September 1971
3. FREQUENCY OF ISSUE: Quarterly		
4. LOCATION OF HEADQUARTERS OR OF PUBLICATION: (Not for classes; use ZIP code) (Not present)		
5. LOCATION OF THE HEADQUARTERS OR GENERAL BUSINESS OFFICES OF THE PUBLISHER (Not present)		
6. NAMES AND ADDRESSES OF PUBLISHER, EDITOR, AND MANAGING EDITOR		
PUBLISHER (Name and address): American Society for Microbiology, 4715 Cordell Ave., Bethesda, Md. 20014		
EDITOR (Name and address): R. G. E. Murray, Department of Bacteriology, University of Western Ontario, London 72, Ontario, Canada		
MANAGING EDITOR (Name and address): Robert A. Day, 4011 Rickover Rd., Silver Spring, Md. 20902		
7. OWNER: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual must be given.)		
NAME ADDRESS American Society for Microbiology, 4715 Cordell Ave., Bethesda, Md. 20014		
8. KNOWN BONDHOLDERS, MORTGAGEES, AND OTHER SECURITY HOLDERS OWNING OR HOLDING 1 PERCENT OR MORE OF TOTAL AMOUNT OF BONDS, MORTGAGES, OR OTHER SECURITIES: (If there are none, so state.) None		
9. FOR OPTIONAL COMPLETION BY PUBLISHERS MAILING AT THE REGULAR RATES (Section 132.121, Postal Service Manual) 39 U. S. C. 3626 provides in pertinent part: "No person who would have been entitled to mail matter under former section 635B of this title shall mail such matter at the rates provided under this subsection until he files actually with the Postal Service a written request for permission to mail matter at such rates in accordance with the provisions of this article. It hereby requests permission to mail the publication named in item 1 of the reduced postage rates presently authorized by 39 U. S. C. 3626." Signature and title of editor, publisher, business manager, or owner: <i>Robert A. Day</i>		
10. FOR COMPLETION BY NONPROFIT ORGANIZATIONS AUTHORIZED TO MAIL AT SPECIAL RATES (Section 112.122, Postal Manual) (Not for use) The purpose, function, and nonprofit status of this organization and the exempt status for Federal income tax purposes: (If changed, publisher must submit explanation of change with this statement.) a) have not changed during preceding 12 months b) have changed during preceding 12 months		
11. EXTENT AND NATURE OF CIRCULATION		AVERAGE NO. COPIES EACH ISSUE DURING PRECEDING 12 MONTHS
A. TOTAL NO. COPIES PRINTED (Net Press Run)		13,213
B. PAID CIRCULATION 1. SALES THROUGH DEALERS AND CARRIERS, STREET VENDORS, AND COUNTER SALES		0
2. MAIL SUBSCRIPTIONS		12,018
C. TOTAL PAID CIRCULATION		12,018
D. FREE DISTRIBUTION BY MAIL, CARRIER OR OTHER MEANS 1. SAMPLES, COMPLIMENTARY, AND OTHER FREE COPIES		18
2. COPIES DISTRIBUTED TO NEWS AGENTS, BUT NOT SOLD		0
E. TOTAL DISTRIBUTION (Sum of C and D)		12,036
F. OFFICE USE, LEFT-OVER, UNACCOUNTED, SPOILED AFTER PRINTING		1,195
G. TOTAL (Sum of B, C, D, E, F, and G) (Include paid net press run shown in A)		13,213
Signature of editor, publisher, business manager, or owner: <i>Robert A. Day</i>		

PS Form 3526 July 1971

AUTHOR INDEX

VOLUME 35, 1971

Baltimore, David, 235
Bergan, Tom, 379
Brock, Thomas D., 39

Carpenter, C. C. J., Jr., 1
Cohen-Bazire, G., 171

Gordon, Helmut A., 390
Greenough, W. B., 1

Halliday, W. J., 267
Heberling, R. L., 310
Hungate, Robert E., 231

Kahan, Barry D., 59
Kalter, S. S., 310
Kunisawa, R., 171

Lamanna, Carl, 242

Mandel, M., 171

Nečas, C., 149

Ornston, L. N., 87

Pesti, Laszlo, 390
Pierce, N. F., 1

Reisfeld, Ralph A., 59
Romeo, D., 14
Rothfield, L., 14

Sakaguchi, Genji, 242
Shatkin, A. J., 250
Simmons, D. A. R., 117
Staehelin, Matthys, 290
Stanbridge, Eric, 206
Stanier, R. Y., 171

Tizard, Ian R., 365

Wehrli, Walter, 290

SUBJECT INDEX

VOLUME 35, 1971

- Acetamide pathway
 - in *Pseudomonas*, 87
- Adenoviruses
 - serological infection, 310
- Algae
 - blue-green, 171
- Allograft rejection, 59
- Animal viruses,
 - genetic system, 235
- Antibiotics
 - action of rifamycins, 290
- Antibody
 - macrophage-cytophilic, 365
- Antigen
 - S. flexneri* O-antigen, 117
- Antigen extraction, 59
- Antilymphocytic serum, 267
- Aphanocapsa*, 171
- Arboviruses
 - serological evidence, 310
- Bacterial cell envelope
 - biosynthesis, 14
- Blue-green algae
 - nomenclature, 171
 - purification and properties of, 171
- Botulinal toxins
 - problems of nomenclature, 242
- Camphor pathway
 - in *pseudomonas*, 87
- Catabolic pathways
 - in *Pseudomonas*, 87
 - regulation of, 87
- Cell-division cycle, 39
- Cell envelope
 - biosynthesis, 14
- Cell wall
 - synthesis in yeast protoplasts, 149
- Chemical markers
 - of transplantation antigens, 59
- Chlorogloea*, 171
- Chlorogloeopsis*, 171
- Cholera enterotoxin
 - mode of action, 1
- Chromosomes
 - aberrations in mycoplasma-infected cultures, 206
- Chroococcales*
 - nomenclature, 171
 - purification and properties, 171
- Clinical applications
 - rifamycins, 290
- Comparative virology
 - of primates, 310
- Contamination
 - with mycoplasmas, 206
- Cytophilic antibodies, 365
- Diarrheagenic toxins
 - from enteric organisms, 1
- Dicarboxylic acids
 - in *Pseudomonas*, 87
- Deoxyribonucleic acid
 - of blue-green algae, 171
- Enterotoxin
 - Vibrio cholerae*, 1
- Escherichia coli*
 - antigenic comparison to *Shigella*, 117
- Fatty acids
 - of blue-green algae, 171
- Genome ribonucleic acid, 250
- Glycerophosphatides
 - in lipopolysaccharide biosynthesis, 14
- Glycosyl carrier lipids
 - role in cell envelope biosynthesis, 14
- Gnotobiotic animals, 390
- Graft compatibility, 59
- Grouping
 - numerical techniques for, 379
- Growth rates, microbial, 39
- Hepatitis virus
 - serological evidence, 310
- Herpesviruses
 - serological evidence, 310
- Hexose pathway
 - in *Pseudomonas*, 87
- Host metabolism
 - in mycoplasma-infected cultures, 206
- Host-microbial relationships, 390
- Hydroxyproline pathway
 - in *Pseudomonas*, 87
- Immunochemistry
 - of *S. flexneri* O-antigen, 117
- Immunoglobulins
 - bound to macrophages, 365
- Immunological paralysis
 - induced in mice, 267
- Infection
 - in gnotobiotic animals, 390
- Influenza virions
 - structure, 250
- Influenza virus
 - genetics, 250
 - protein synthesis, 250
 - RNA synthesis, 250
- α -Ketoacid pathways
 - in *Pseudomonas*, 87
- β -Ketoadipate pathway
 - in *Pseudomonas*, 87
- α -Ketoglutarate pathways
 - in *Pseudomonas*, 87

- Lipids
—in biosynthesis of cell envelope, 14
Lipopolysaccharide
—biosynthesis of core region, 14
—of *S. flexneri* O-antigen, 117
Lymphocytic choriomeningitis virus
—serological evidence, 310
- Macrophages
—antibodies, 365
—bound immunoglobulins of, 365
Mannolipid biosynthesis, 14
Marburg virus
—serological evidence, 310
Mechanism of paralysis
—immunological, 267
Merismopedia, 171
Messenger ribonucleic acid
—in animal viruses, 235
Metabolism
—changes due to mycoplasma contamination, 206
Microbial growth rates
—in nature, 39
Morphogenesis
—in yeast cells, 149
Mycoplasmas
—effects on cell cultures, 206
—properties of, 206
Myxoviruses
—serological evidence, 310
- Nomenclature
—botulinal toxins, 242
—of blue-green algae, 171
—simple toxins, 242
Numerical techniques
—for grouping, 379
- O-antigen
—biosynthesis, 14
—of *S. flexneri*, 117
—structure of, 117
—synthesis, 14
- Papovaviruses
—serological evidence, 310
Paralysis of mice
—immunological, 267
Peptidoglycan synthesis, 14
Picornaviruses
—serological evidence, 310
Pneumococcal polysaccharide antigens
—mice with, 267
Poliovirus
—molecular biology of, 235
Polysaccharides
—of *S. flexneri* O-antigen, 117
Poxviruses
—serological evidence, 310
Presidential address, 231
Primates
—capture and handling, 310
—comparative virology, 310
- Protoplasts
—cell wall synthesis in, 149
—of yeast, 149
Pseudomonas
—catabolic pathways of, 87
- Rabies virus
—serological evidence, 310
Rauscher murine leukemia virus
—serological evidence, 310
Reovirus
—protein synthesis, 250
—RNA synthesis, 250
—serological evidence, 310
Reproduction
—role of cell wall, 149
Rifamycins
—actions of, 290
Rous sarcoma virus
—serological evidence, 310
Rubella virus
—serological evidence, 310
- SA11 virus
—serological evidence, 310
Saccharomyces cerevisiae
—cell wall synthesis in protoplasts, 149
Salmonella
—antigenic comparison to *Shigella*, 117
Schizosaccharomyces pombe
—cell wall synthesis in protoplasts, 149
Segmented ribonucleic acid
—viruses, 250
Shigella flexneri
—O-antigens of, 117
Simian hemorrhagic fever virus
—serological evidence, 310
Solubilized antigens
—chemical markers, 59
Sonic treatment
—of transplantation antigens, 59
Steady-state populations, 39
Stereochemistry
—of *S. flexneri* O-antigen, 117
Streptomyces mediterranei
—rifamycins from, 290
- Tartrate pathway
—in *Pseudomonas*, 87
Taxonomy, numerical, 379
Teichoic acid biosynthesis, 14
Tissue cultures
—contamination with mycoplasma, 206
Toxins, botulinal, 242
Transplantation antigens, soluble
—extraction, 59
Tricarboxylic acid cycle
—in *Pseudomonas*, 87
Tumor viruses
—RNA, 235

Valine pathway
—in *Pseudomonas*, 87
Vesicular stomatitis virus
—molecular biology of, 235
—serological evidence, 310
Vibrio cholerae enterotoxin
—mode of action, 1
Viral genetic system, 235

Virion nucleic acid
—polymerases of, 235
Virology of primates
—comparative, 310
Virus genomes, 235
Yeast
—cell wall synthesis in, 149
—protoplasts, 149

BACTERIOLOGICAL REVIEWS

VOLUME 35

BALTIMORE, MD.
1971

COPYRIGHT © 1972, AMERICAN SOCIETY FOR MICROBIOLOGY

CONTENTS

- Vibrio cholerae* Enterotoxin and Its Mode of Action. N. F. PIERCE,
W. B. GREENOUGH, AND C. C. J. CARPENTER, JR. 1-13
- Role of Lipids in the Biosynthesis of the Bacterial Cell Envelope.
L. ROTHFIELD AND D. ROMEO. 14-38
- Microbial Growth Rates in Nature. THOMAS D. BROCK. 39-58
- Chemical Markers of Transplantation Individuality Solubilized with
Sonic Energy. BARRY D. KAHAN AND RALPH A. REISFELD. 59-85

CONTENTS

- Regulation of Catabolic Pathways in *Pseudomonas*. L. N.
ORNSTON. 87-116
- Immunochemistry of *Shigella flexneri* O-Antigens: a Study of
Structural and Genetic Aspects of the Biosynthesis of Cell-
Surface Antigens. D. A. R. SIMMONS. 117-148
- Cell Wall Synthesis in Yeast Protoplasts. C. NEČAS. 149-170
- Purification and Properties of Unicellular Blue-Green Algae
(Order *Chroococcales*). R. Y. STANIER, R. KUNISAWA, M.
MANDEL, AND G. COHEN-BAZIRE. 171-205
- Mycoplasmas and Cell Cultures. ERIC STANBRIDGE. 206-227

CONTENTS

- The Search for Reality. ROBERT E. HUNGATE. 231-234
- Expression of Animal Virus Genomes. DAVID BALTIMORE. 235-241
- Botulinal Toxins and the Problem of Nomenclature of Simple
Toxins. CARL LAMANNA AND GENJI SAKAGUCHI. 242-249

Viruses with Segmented Ribonucleic Acid Genomes: Multiplication of Influenza Versus Reovirus. A. J. SHATKIN.	250-266
Immunological Paralysis of Mice with Pneumococcal Polysaccharide Antigens. W. J. HALLIDAY.	267-289
Actions of the Rifamycins. WALTER WEHRLI AND MATTHYS STAEHELIN.	290-309
Comparative Virology of Primates. S. S. KALTER AND R. L. HEBERLING.	310-364

VOLUME 35 • NUMBER 4 • DECEMBER 1971

CONTENTS

Macrophage-Cytophilic Antibodies and the Functions of Macrophage-Bound Immunoglobulins. IAN R. TIZARD.	365-378
Survey of Numerical Techniques for Grouping. TOM BERGAN.	379-389
The Gnotobiotic Animal as a Tool in the Study of Host Microbial Relationships. HELMUT A. GORDON AND LASZLO PESTI.	390-429

